



## COMBINED VIRTUES

*The Arpin Monoplane Makes Its Public Appearance : A New Pusher Type with a Tricycle Undercarriage*

TOWARDS the end of last year we gave some details and published a scale drawing of a new private-owner type which was being made by M. B. Arpin and Co., of Longford, West Drayton, Middlesex. During the last few weeks the prototype has been nearing completion, the final assembly and finishing work being done at Rollasons at Hanworth, and the machine came out into the open in public for the first time at the R.Ae.S. Garden Party.

For a prototype the Arpin A.1 monoplane is certainly very well made and finished. A great deal of attention has been paid to detail work and such items as control leads are of a sturdy and workmanlike type such as one expects to see only on larger machines. Apart from what is still an unconventional general layout, the structure is comparatively orthodox. The wing is of plywood-stressed skin with a single spar, which, though in three pieces for dismantling purposes, is virtually continuous. What used, in the old days, to be called the nacelle is a particularly capacious box structure in which the pilot and the passenger are seated in tandem beneath a transparent "lid" giving more than ample headroom. The three-piece windscreen must be nearly two feet in depth and, since the machine is of the pusher type, the view in all the essential directions should be as good as is possibly obtainable.

The two fully cantilever booms which support the tail unit are built up of four members in diamond section with plywood stiffening. The tailplane and the two fins are each again of ply-stressed construction and the control rods for the elevator and rudders pass through the centre of the port and starboard booms respectively. There is, in fact, no exterior control mechanism and the entire machine is as clean as the attention to personal comfort in the nacelle will permit.

The three-piece trailing-edge flap extends from aileron to aileron and each section is a double-surfaced structure.

The engine fitted to the prototype is an A.D.9 R. British Salmson radial with a maximum output of 68 b.h.p., in which a four-bladed airscrew is driven through a reduction gear. The slow airscrew speed should permit good efficiency at the lower end of the speed range. The fuel tanks are arranged in the centre section on the starboard side, and there is a gravity tank for direct feed to which fuel is pumped by means of a handle in the cockpit. This tank has a capacity sufficient for three-quarters of an hour's flying, and beside the pilot there is an overflow indicator to tell him when he has duly filled it up. In all, the fuel capacity is such that the estimated endurance at cruising speed is as much as five hours.

Since it is obviously possible to break any undercarriage by either gliding it or allowing it to sink into the ground at a high vertical velocity, Mr. Arpin has not attempted to give the tricycle undercarriage anything very exceptional in the way of travel. He feels that a machine should normally be landed in a more or less orthodox fashion and the tricycle arrangement is designed in this case merely to give the pilot, so to speak, a second chance and to improve the ground characteristics generally. The Arpin's undercarriage is, in effect, a rationalised tricycle. The casting front wheel is steerable.

A brief test flight was carried out last week-end by Mr. Wynne Eyton, but no actual performance figures are yet available. The estimated maximum speed of the Arpin is 108 m.p.h., the cruising speed (at 65 per cent. power) is expected to be 95 m.p.h. and the landing speed, with the flaps down, rather less than 40 m.p.h.

### London-I.O.M. Entries

SOME interesting entries have already been received for the London to Isle of Man Race which takes place on Saturday, June 4. Lord Wakefield has entered the De Havilland Technical School's T.K.2, which, as reported recently in *Flight*, is being considerably modified by the students, the modifications including cutting down of the wing area.

Mr. Giles Guthrie is to fly a Mew Gull and Mr. W. Humble a Sparrowhawk, while Herr Seidemann, the German pilot who was awarded first place last year with a Messerschmitt Taifun, will also take part.



"Flight" photographs.

These two views, and the one in the heading above, give a good idea of the appearance of the prototype Arpin. The engine at present fitted is a 68 h.p. British Salmson.